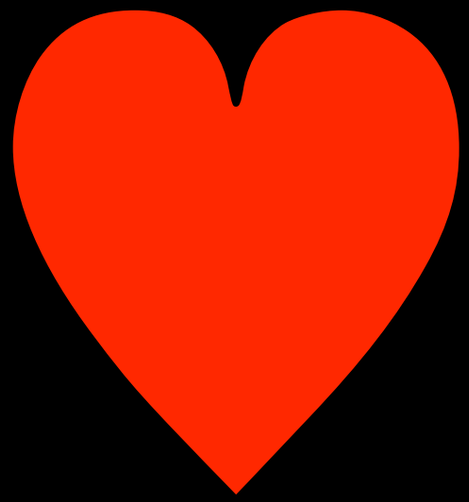
Java
State of the Union

Session 601

Java
State of the Union

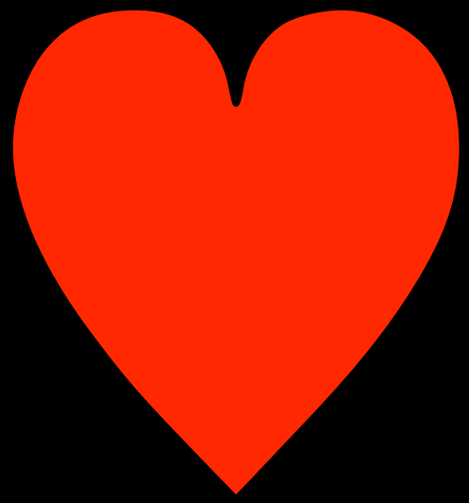
Ted Goldstein
Vice President of Development Technologies

Java at Apple



Java™

Strategic
cross-platform
technology



Strategic cross-platform technology

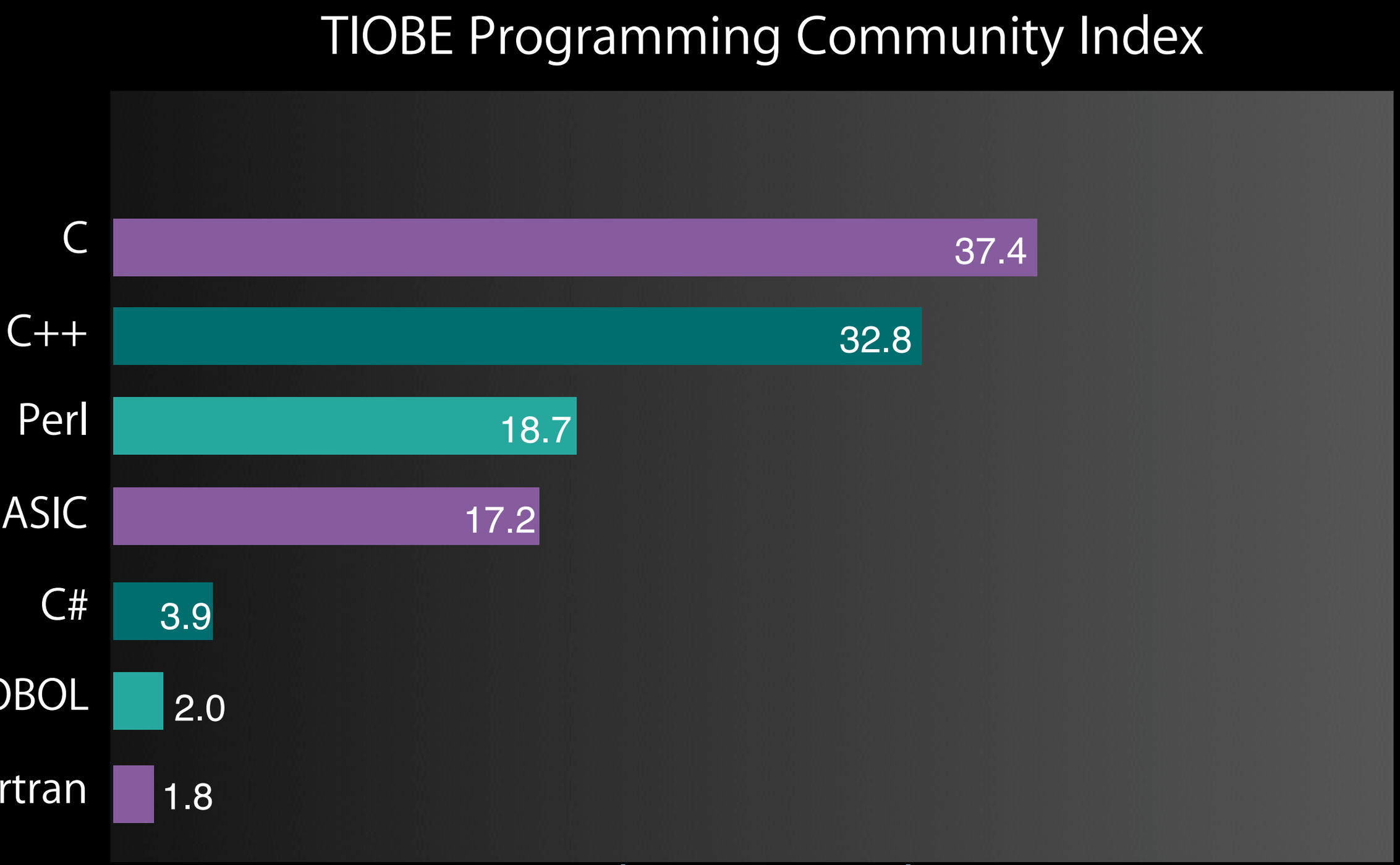
Key component of enterprise solutions

Strategic cross-platform technology

Key component of enterprise solutions

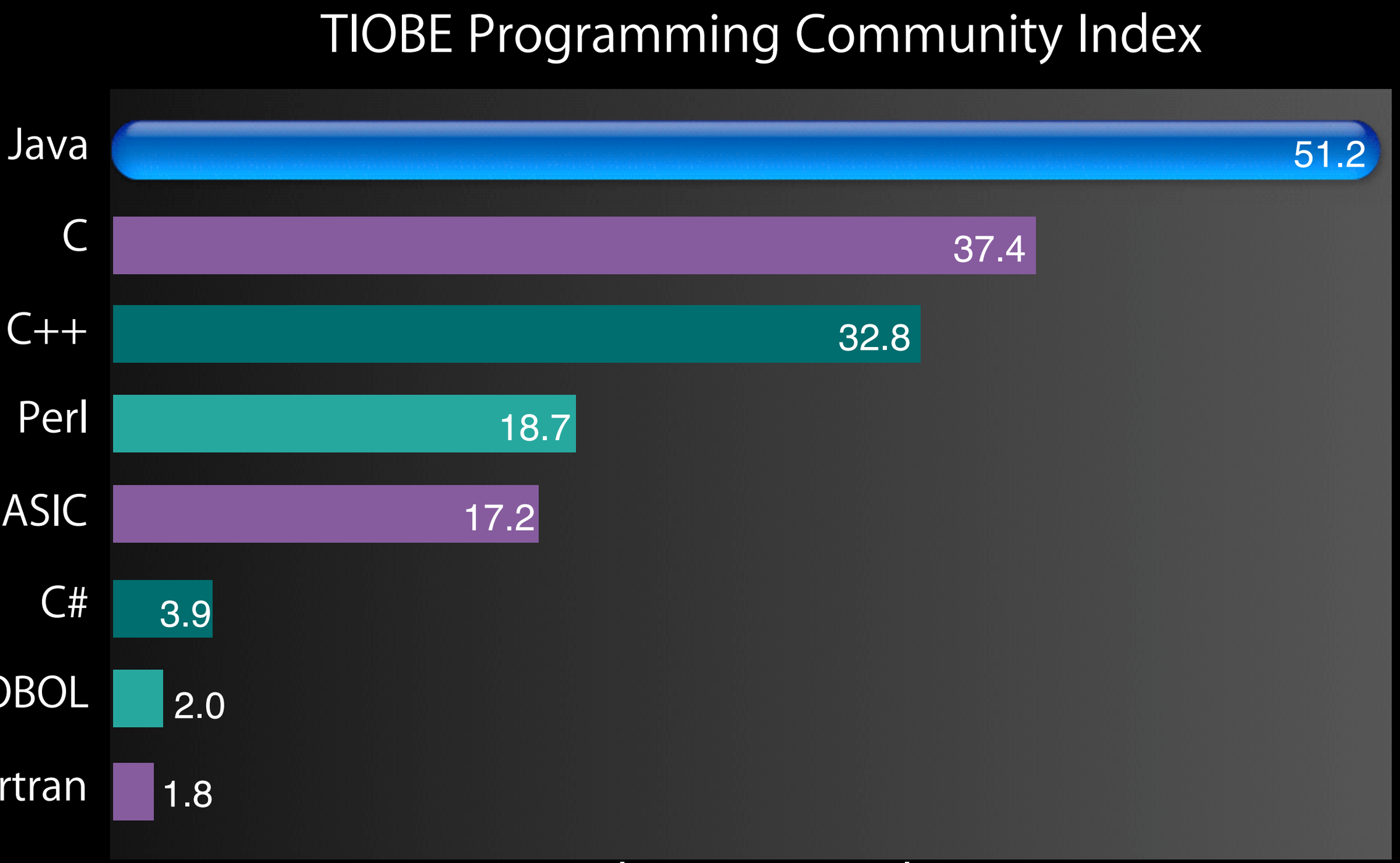
Lets you bring new solutions to Mac OS X

Developer Mindshare



www.tiobe.com/tpci.htm

Developer Mindshare



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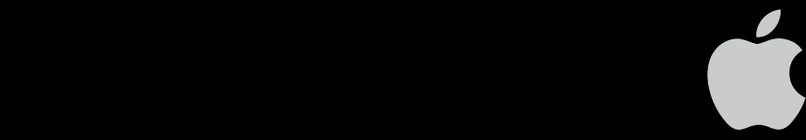
Increased Demand for Java

- 3 million Java programmers
- Over half of the world's PCs have Java
- Sun has recommitted to Java on the desktop
- HP and Dell are emulating Apple by bundling the J2SE on new hardware

We use Java to run our business.



Java Is in Apple Products

Mac OS X

Mac OS X Server

WebObjects

.mac

Applications you've brought to Mac OS X

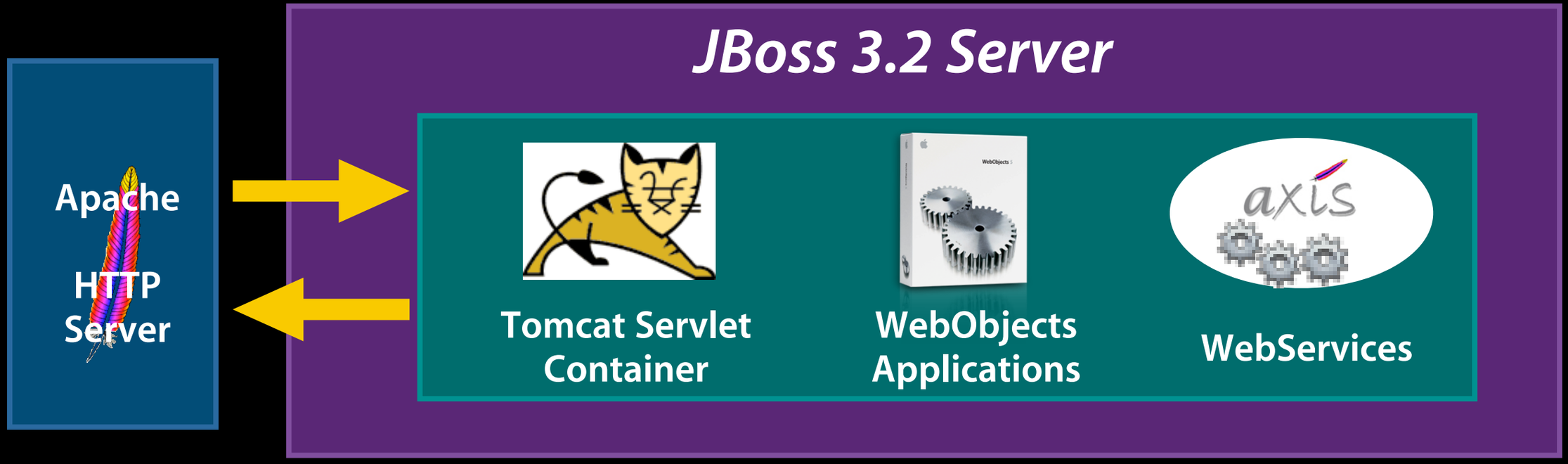
Announcing

JBoss

3.2

JBoss 3.2
The Open Source J2EE-like Technology

- Apache Tomcat 4.1.x
- WebObjects 5.2.2
- Apache Web Services/SOAP Engine, Axis v1.1



Want More Information? Go To:
605 WebObjects and J2EE
612 Enterprise App Deployment

Java in Every Box

- Java bundled with every Apple system
- Panther includes both Java 1.3 and 1.4
- Apple developer tools support Java
- JBoss included with Mac OS X Server

What We've Done

What We've Done

- Aggressive inline JITc compilation
- New I/O (NIO)
- Multiple version support
- Speed improvements
- New hardware support

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- Aggressive inline JITc compilation
- New I/O (NIO)
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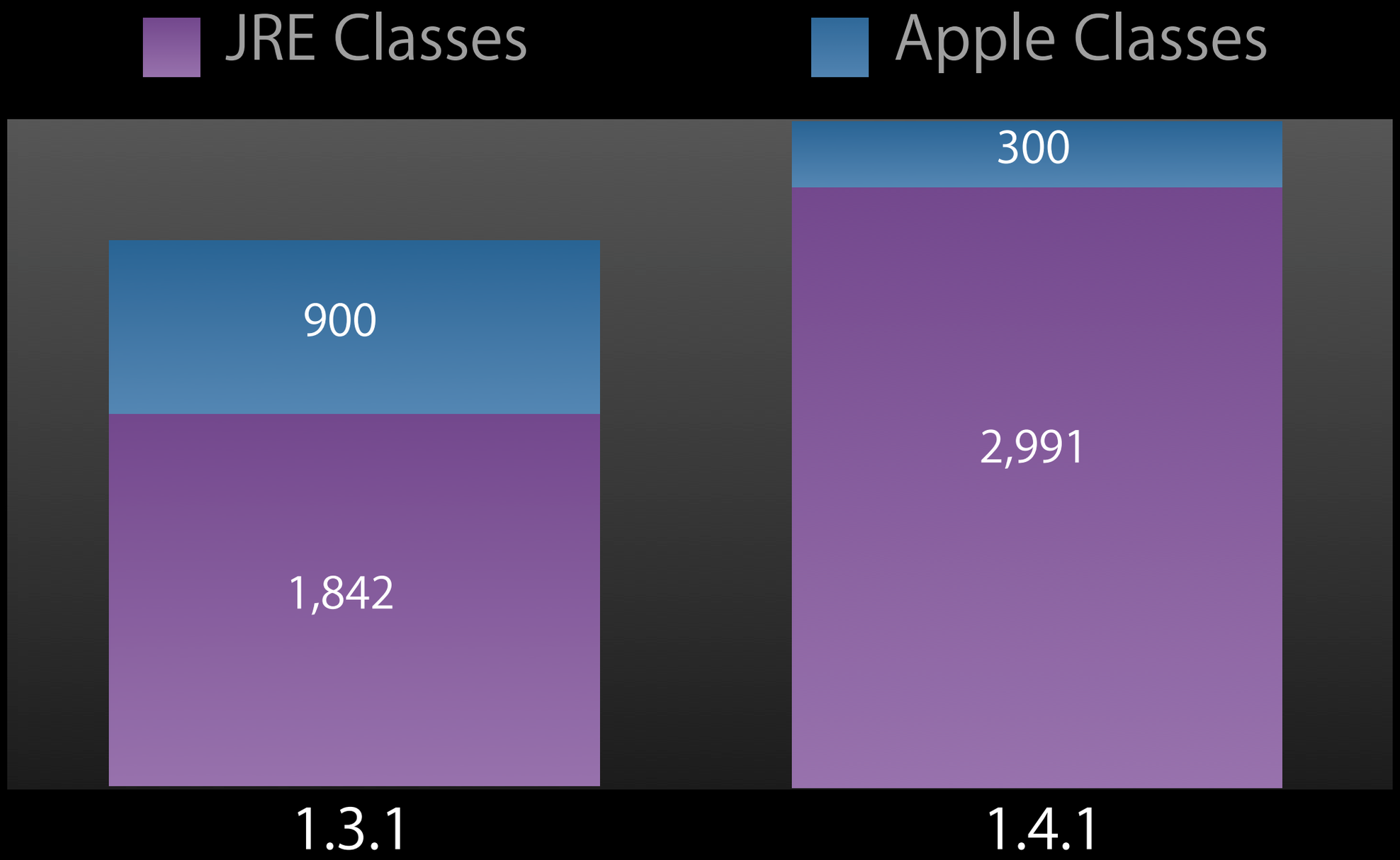
- Architected for the future
- New JDK 1.4 features

More Features, Less Overhead



Java 1.4.1 for Mac OS X

Scott Adler
Java 1.4 Classes Technical Lead

10.0

10.1

March

Java 1.3.0

Sept

Java 1.3.1

2001

Java 1.4.0
Preview
WWDC

10.2

Java 1.4.1
Previews

Java
1.4.1

Java 1.4.1
and 1.3.1
Panther Preview

Java 1.4.1
Update
Jaguar Preview

March

May

Sept

Nov — Feb

Mar

May

WWDC

Java 1.3.1
Update

Java 1.3.1

Java 1.3.1
Oracle Certified

2002

2003

Multiple Version Support

- Version can be specified on a per-app basis
- Backwards compatibility for double-clickable apps
- Both will be included in Panther

- Over 1 million downloads of 1.4.1

1.3.1

1.4.1

J2SE v1.3 Platform

Deployment	Java Web Start		Java Plug-in	
UI Toolkit	Swing		AWT	
	Java 2D			
	Sound	Input Methods	Accessibility	
Integration APIs	RMI	JDBC	JNDI	CORBA
Core APIs	Beans		Security	
	Lang		Networking	
	Util		Locale Support	
	JNI		Collections	
Java Virtual Machine	HotSpot Compiler			
	HotSpot Virtual Machine			
OS Platforms	Mac OS X	Linux	Windows	Solaris	Other

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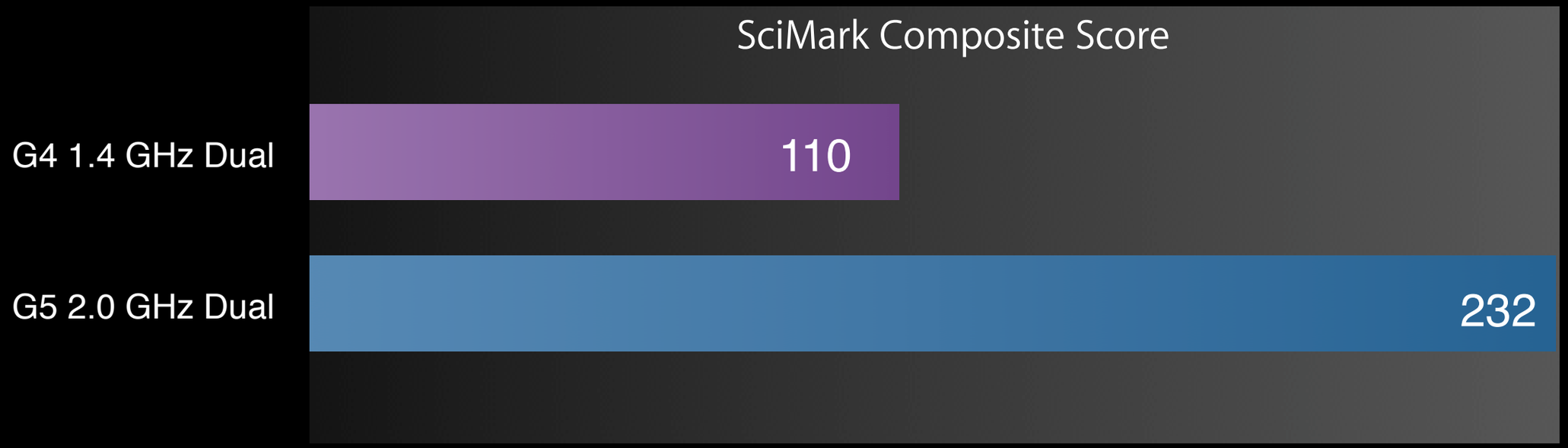
Java 1.4 on Mac OS X

Performance Improvements

Runtime Improvements

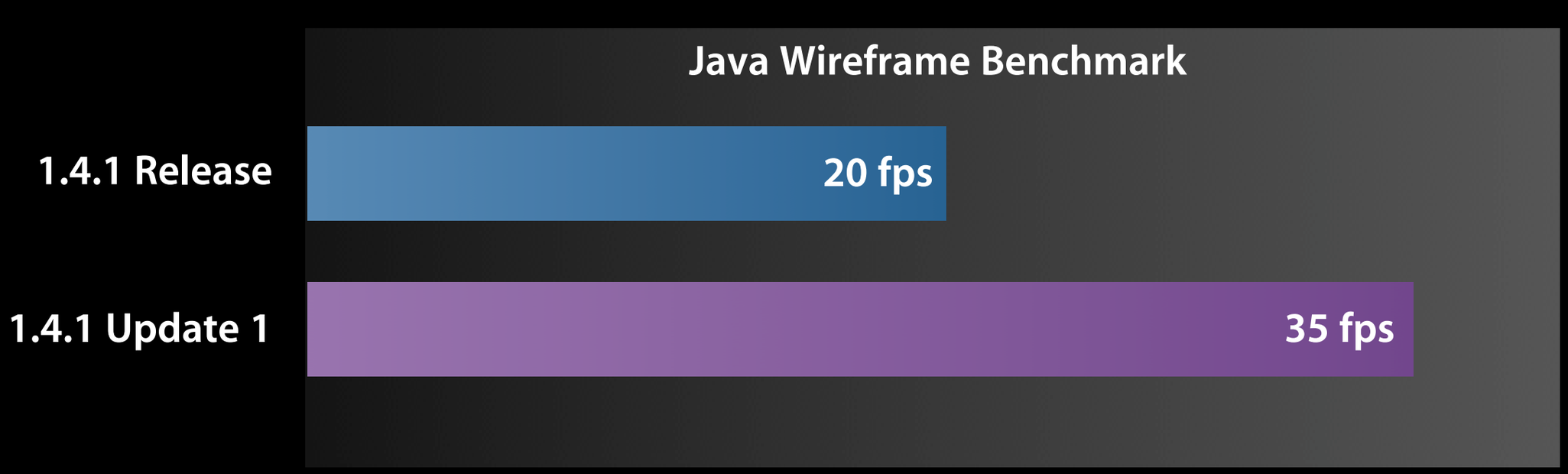
- Server and scientific apps (non-GUI)
- Aggressive inlining
- New I/O API
- Support for new hardware



Want More Information? Go To:
625 Maximizing Java Performance on Mac OS X

Graphics Improvements

- Faster across the board
- New state management
- Bug fixes



Want More Information? Go To:
625 Maximizing Java Performance on Mac OS X

Java 1.4 on Mac OS X

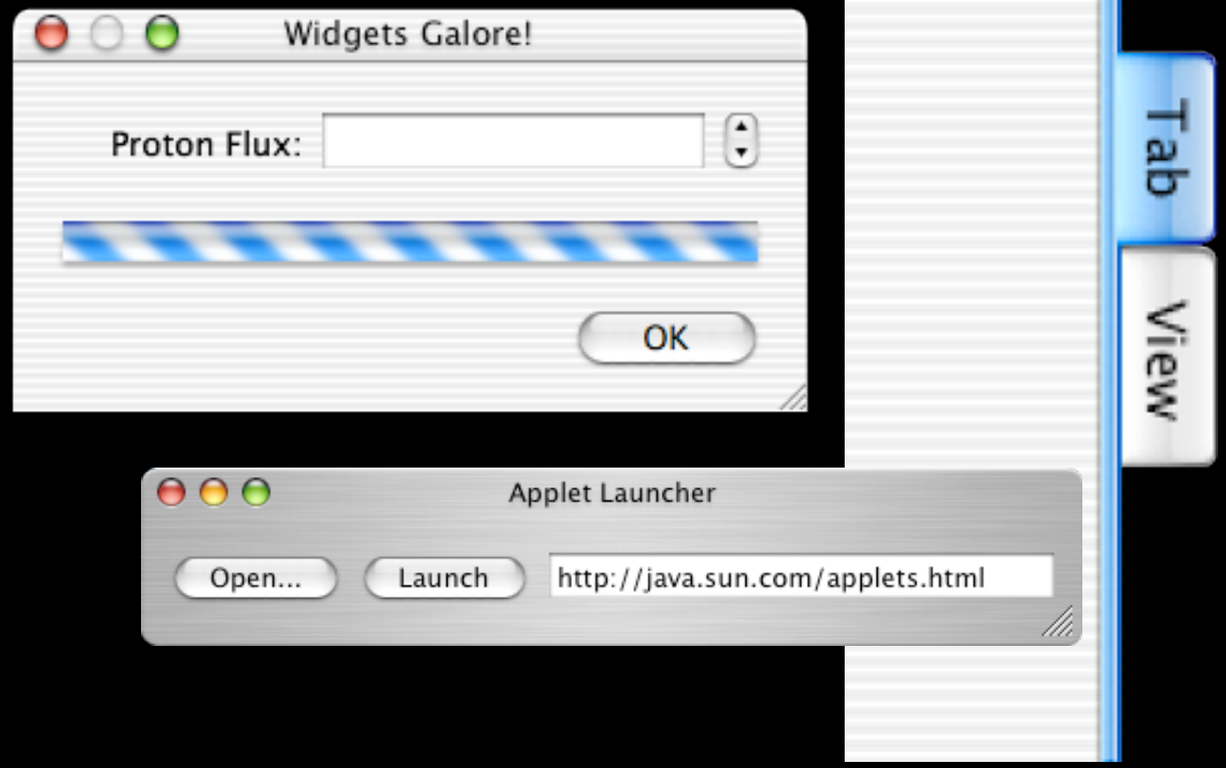
AWT, Swing, and More

AWT Architecture Changes

- AWT peers use Cocoa
- Colors and artwork inherited from frameworks
- Services menu
  - Speech
  - Spelling
- Input methods, Inkwell
- Accessibility, AppleScript

Swing Aqua Look and Feel

- Swing uses native Cocoa-based rendering
- Inherited benefits:
  - Native menu bar
  - Brushed metal
  - Translucent windows
  - New widgets
  - Internationalization support



Need More Info? Go To:
608 Creating Great Java Applications on Mac OS X

Demo

Greg Bolsinga
Demo Manipulator

More Mac OS X Enhancements

- eAWT
- Runtime options
- Deployment
  - .jar files
  - Application bundles
- OpenGL bindings - jogl

Need More Info? Go To:
608 Creating Great Java Applications on Mac OS X

Reaching Out to Apple APIs

- Java applets via the WebKit SDK
- Cocoa components in a Java app
- More APIs
  - Disc Burning
  - Cryptography
- QuickTime for Java 6.1
  - New bindings for new QuickTime APIs
  - New quicktime.app.view package
  - Available for 1.4.1 on Mac OS X

Want More Information? Go To:
620 Java Native Integration on Mac OS X
708 QuickTime APIs Update
420 Internet Technologies: Advanced WebKit APIs

Demo

Apple APIs

Java 1.4 on Mac OS X

Web Integration

Web Integration

- Safari applet support
- More applets on Mac OS X than ever before
- 1.4 plug-in for Carbon browsers
- Java Web Start

Need More Info? Go To:
619 Java and the Web

Java Moving Forward

The Future of Java:

1.4.1 Update for Mac OS X 10.2

- Hundreds of bug fixes
- Performance enhancements
  - Graphics
  - Java VM
  - Aqua
- Delivered as a Software Update

Demo

Java 1.4.1 Update Demo

The Future of Java:

Panther

- Starts with 1.4.1 update 1
- Panther graphics improvements
- Aqua improvements
- Font performance
- Improved I/O performance
- Includes both 1.4.1 and 1.3.1
- JBoss with Mac OS X Server

Before You Go!

Alan Samuel
Java Technologies Evangelist

Demo

Magnus Hedberg
Chief Strategy Officer
Marratech

Desktop Java Roadmap

608 Creating Great Java Applications on Mac OS X	Nob Hill Wednesday, 9:00 am
629 Java and the Web	Nob Hill Thursday, 10:30 am
620 Java Native Integration on Mac OS X	Nob Hill Thursday, 2:00 pm
625 Maximizing Java Performance on Mac OS X	Russian Hill Friday, 3:30 pm
708 QuickTime APIs Update	Pacific Heights Tuesday, 5:00 pm
FF015 Internet and NetworkingTechnologies	The Mission Friday, 10:30 am

Enterprise Java Roadmap

603 WebObjects Technical Overview	The Mission Monday, 3:30 pm
605 WebObjects and J2EE	Pacific heights Tuesday, 3:30 pm
609 Rapid Application Development with WebObjects	Session 609 Russian Hill Wed, 10:30 am
612 Enterprise Application Deployment	Russian Hill Wednesday, 2:00 pm
624 WebObjects—Creating Web Services	Nob Hill Fri, 3:30 pm

Java Contacts

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Java Developer Mailing List
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Reference Library

Java Developer Documentation

http://developer.apple.com/techpubs/java

ADC Java Developer Site

http://developer.apple.com/java

Sun's Java Web Site

http://java.sun.com

Java 1.4.1 Update 1 Developer Preview

http://connect.apple.com

QuickTime for Java Seed

http://connect.apple.com

WWDC Uber Link List

http://developer.apple.com/wwdc2003/url.html

WWDC 2003

Worldwide Developers Conference